Integrating the past, present, and future of Landsat: Continuity of science, applications, monitoring, and reporting

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Integrating the past, present, and future of Landsat: Continuity of science, applications, monitoring, and reporting

Want: Science based policy support
Need data to support science and applications

Past: create detailed history of forests
Present: Products (cover, change, attributes, recovery, structure)
- Data integration (RS, spatial, lidar)
- Cross-sensor, virtual constellations, Sentinel-2
Future: advocacy, L9 and beyond.

Short term and long term objectives
- BAP methods testing and development
- L8 readiness and initial studies
- Systematic and reliable product development based upon continuous data stream
- Improved capacity to make projections
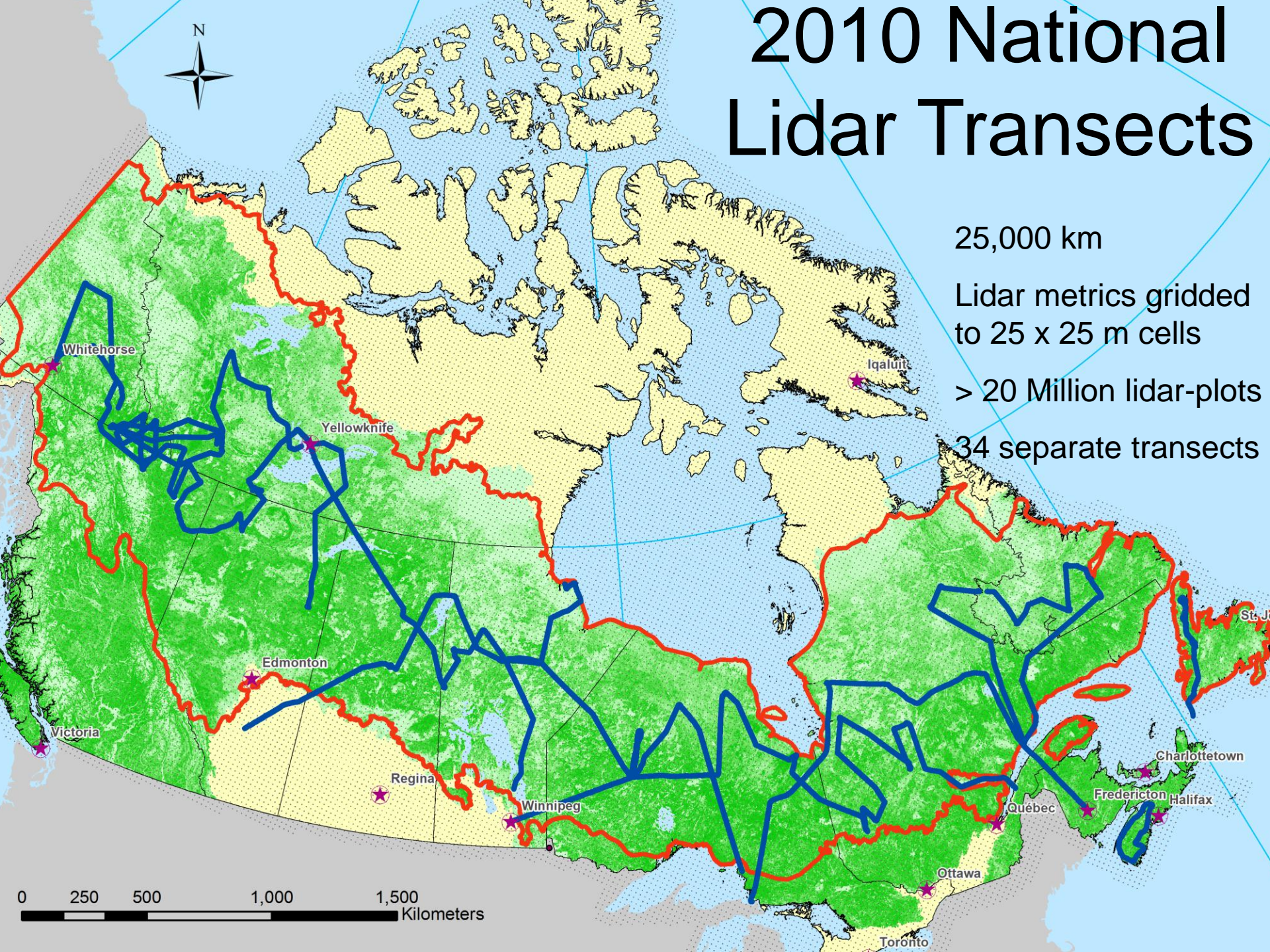- Reduce uncertainty in all we do

2010 National Lidar Transects

25,000 km

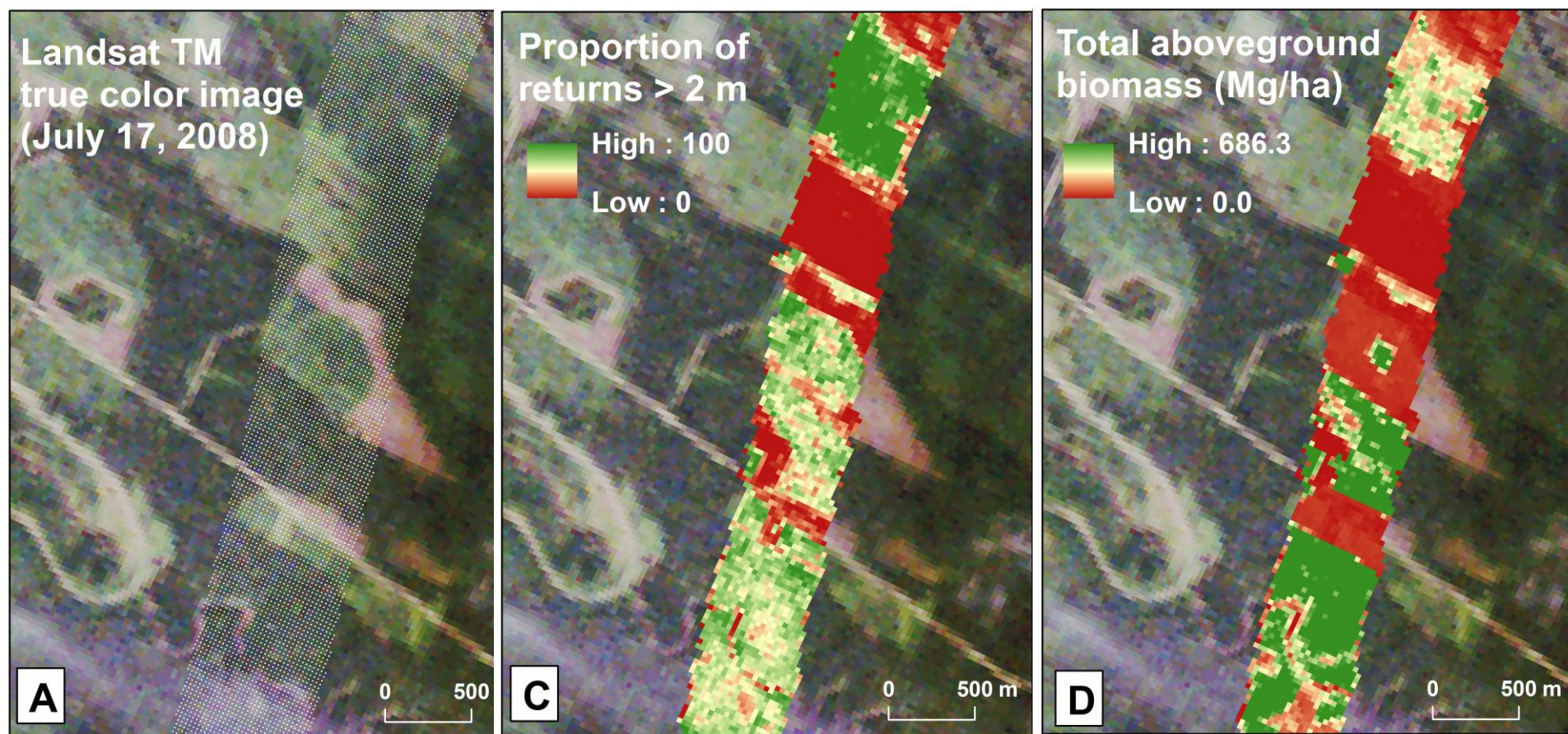Lidar metrics gridded to 25 x 25 m cells

> 20 Million lidar-plots

34 separate transects

Whitehorse

Iqaluit

Yellowknife

Edmonton

Victoria

Regina

Winnipeg

Charlottetown

Fredericton Halifax

Québec

St. J

Ottawa

Toronto

N

0   250   500   1,000   1,500
Kilometers

Trasects, metrics, attributes

Wulder, M.A., J.C. White, C.W. Bater, N.C. Coops, C. Hopkinson, and G. Chen. (2012). Lidar plots—a new large-area data collection option: context, concepts, and case study. Canadian Journal of Remote Sensing. Vol. 38, No. 05, pp. 600-618. (DOI: http://dx.doi.org/10.5589/m12-049)

Application

- Calibration and validation of wide-area remote sensing products and modeling
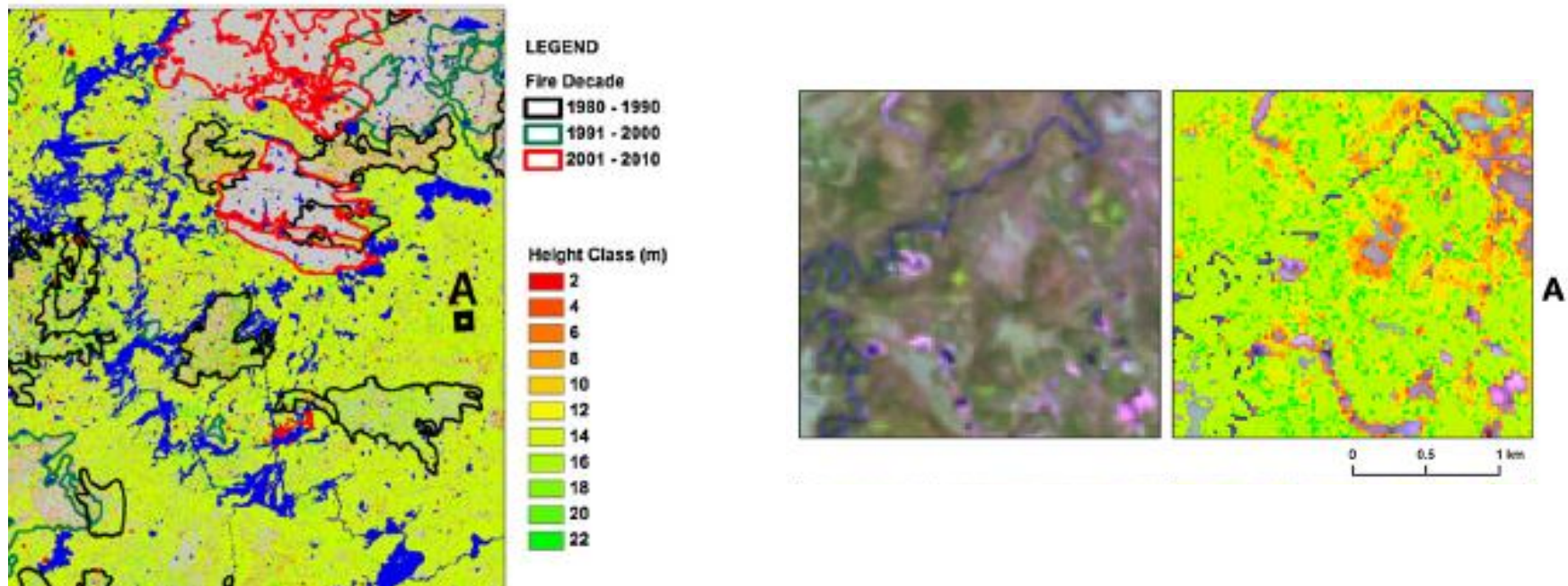
Chen, G., M.A. Wulder, J.C. White, T.H. Hilker, and N.C. Coops. (2012). Lidar calibration and validation for geometric-optical modeling with Landsat. Remote Sensing of Environment. Vol. 124, pp. 384–393. DOI: http://dx.doi.org/10.1016/j.rse.2012.05.026

Thank you

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Publications:

http://cfs.nrcan.gc.ca/publications/authors/read/11091